

Abstract of the Disclosure

A method generates a distance field for a region of a shape descriptor representing an object. The distance field includes a set of cells for which cell types are defined. A configuration of a set of cells for the region is generated. Each cell of the configuration includes a cell type and a method for reconstructing the distance field within the cell. The configuration of the set of cells is modified until an optimal configuration is reached. The modification is based on the shape descriptor, the region, and the set of cell types. The optimal configuration of the set of cells is stored in a memory to generate the distance field for the region. Another method generates a two-dimensional distance field within a cell associated with a two-dimensional object. A set of boundary descriptors for the two-dimensional object is determined and partitioned into a set of segments. The segments are delimited by a set of features of the boundary descriptors. A first and second segment associated with the cell are identified. First and second sets of distance values using the first and second segments are specified. A method for reconstructing the distance field within the cell, using the first and second sets of distance values, is defined. The first and second sets of distance values and the reconstruction method are stored to enable reconstruction of the distance field within the cell by applying the reconstruction method.